

## TIPS FOR COLLECTING HABITAT STRUCTURE ASSESSMENT DATA

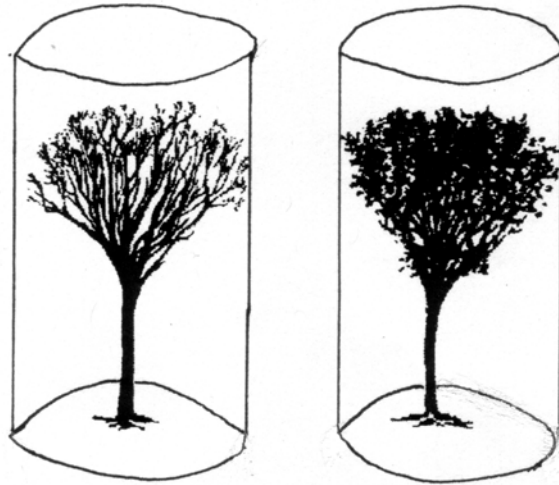
Thanks to everyone who has submitted HSA data. This habitat data is invaluable for our analyses, as it allows us to find links between avian productivity and survivorship, and the patterns of landscape structure at MAPS stations.

We know that collecting HSA data can be a complicated and time-consuming process. To make the data collection quicker and easier, and to increase the quality of the data, we have prepared the following list of pointers. This form is designed to function as a supplement to the HSA Manual, but it is still very important to review the Manual before conducting your HSA analysis. There were no changes to the HSA Protocol, so manuals were sent only to new operators. However, the HSA Manual is available on our website ([www.birdpop.org/MANUALS.htm](http://www.birdpop.org/MANUALS.htm)) for download, or call the office and we will send you a copy. Please read over this list before conducting your analysis, and feel free to call (415-663-2050) or e-mail Phil Nott ([pnott@birdpop.org](mailto:pnott@birdpop.org)) or Mary Chambers ([mchambers@birdpop.org](mailto:mchambers@birdpop.org)) at IBP with any questions.

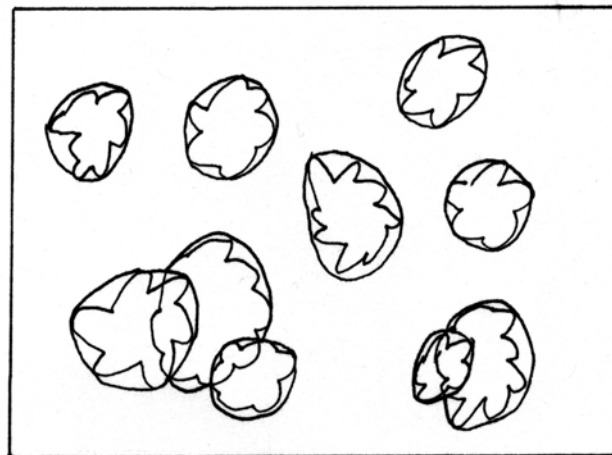
- Habitat Structure Assessments no longer need to be conducted yearly. Instead, **complete HSA's should be conducted every five years, unless the habitat at your station has undergone a major change** (e.g., fire, hurricane, logging, construction, brush-clearing, etc.). We do ask that you **take a copy of your station map and completed HSA forms into the field each year at the appropriate time and verify that the information is correct, and has not significantly changed.**
- When preparing station maps, please label each habitat with the letter representing its dominance code (i.e., A for the dominant habitat, B for the sub-dominant habitat, etc.)
- Fill out a separate HSA form for each habitat that occurs at your station.
- Water features (lakes, ponds, or rivers, regardless of size) should be included as part of the surrounding or adjoining habitat - do not designate a water feature as a separate habitat.
- Successional Stage refers to the stage (early-, mid-, or late-successional) of the habitat in the local/regional habitat successional cycle. Generally, succession proceeds from barren ground/field/shrubland (early-successional) to young forest (mid-successional) to mature forest (late-successional). In some regions, however, the climax habitat may actually be a field/meadow (e.g., montane meadows, tundra) or a shrubland (e.g., California coastal scrub, sagebrush shrub-steppe). What we wish to know is the likelihood of change in that habitat in the near future: early-successional habitats change rapidly, mid-successional habitats change rather slowly, and late-successional habitats change very slowly.
- As many operators saw last year, the NVCS Alliance listings do not describe every habitat encountered. Even if you are unable to find an alliance code that adequately describes the habitat at your station, please determine the National Vegetation Classification Standard to the Formation level (i.e., IA2Nb, IIC2Na, or VB2Nd), and simply leave the Alliance field blank. In addition, always give a brief description in the "Describe habitat type" field and give a detailed description of the habitat, including dominant species and hydrology, in the "General description of habitat" field.
- Percentage cover midpoints (listed at the bottom of the HSA form) should be used to describe the cover of the Upperstory, Midstory, and Understory only. Please use actual percentages to describe Ground cover and the cover of Non-vegetative features (e.g., Running water and Standing water).

- When determining cover, imagine tracing the periphery of every tree (or shrub, forb, etc) in the layer you are analyzing, and imagine what percent of that layer is contained within that periphery (or, conversely, what percentage remains as open space). Under this definition, cover can NEVER exceed 100% (do not consider overlap of trees, shrubs, etc.). Note that with sparsely-leaved trees, or trees (shrubs, etc) that have patchy foliage with gaps in their canopy, there may be a lot of light filtering through, but cover of each individual tree (shrub, etc.) is still determined by the area contained within the periphery created by tracing its furthest-extending branches, not by the density of the vegetation contained within that periphery (see figures on final page).
- Also, when determining cover of a given layer, imagining squishing everything within that layer into one flat pancake of vegetation, and determine the percent of the total area occupied by vegetation (so, if you're looking at the midstory and the vegetation is extensive from 10-15 m but sparse from 5-10 m, do not lower the cover value because of that open space below 10 m).
- On the Spatial Pattern Chart, the black area represents the habitat, vegetative layer, or non-vegetative feature being described; the white area represents open space or a different habitat.
- Please use the attached Spatial Pattern Chart.
- Notice that there are cover percentages associated with patterns 7-12. Patterns 10 and 12 should be used to describe habitats or vegetative layers with high cover (over 60%); patterns 8 and 9 describe medium cover habitats or vegetative layers (approximately 40-60%); while patterns 7 and 11 describe low cover habitats or vegetative layers (under 40%). Pattern 1 should be used only for habitats or vegetative layers that have complete (virtually 100%) coverage, while patterns 2-6 can be used for any habitat or vegetative layer, regardless of cover.
- Please assign a pattern to all vegetative layers (Upperstory, Midstory, and Understory), Live and Dead vegetative ground cover, and all Non-vegetative features (e.g., Running water, Human-made Corridors).
- When listing Main Species in each layer, please use scientific names (e.g., *Quercus rubra*, *Abies grandis*, or *Fragaria virginiana*) or specific common names (e.g., Red Oak, Grand Fir, or Wild Strawberry) whenever possible, instead of general names such as Oak, Fir, or Strawberry.
- Ground cover (the sum of Live vegetation, Dead vegetation, and Total non-vegetative) must total 100%.
- The amount of cover entered for Total non-vegetative ground cover should include the natural substrate (rocks, dirt, sand, etc.) plus the cover of all non-vegetative features (Running water, Standing water, Human-made Corridors and Human-made Structures). Thus, the sum of the four non-vegetative features listed on the sheet **can not** exceed the amount of cover listed for Total non-vegetative ground cover. For example, if running water covers 1% of your station, standing water 2%, and human-made corridors 3%, the Total non-vegetative ground cover should be 6% plus the cover of any natural substrate (rocks, dirt, etc) present.
- Flooded areas should be included in standing water as *marsh/bog*, and labeled either *seasonal* or *occasional* depending upon the regularity and duration of the flooding. If a habitat is flooded but Live vegetation ground cover emerges above the water, **do not count the standing water that lies underneath the vegetation**. Similarly, **do not include the cover of other Non-vegetative features or natural substrates that lie underneath flooded areas** (standing water).
- Please do not include net lanes or net-run trails when describing Human-made Corridors.

**Figure 1: To determine the cover provided by any individual tree, shrub, etc. imagine tracing the periphery of the furthest-extending branches and counting the area that lies within that periphery, regardless of the density of the vegetation contained within that periphery. Thus, these two trees provide the same amount of cover.**

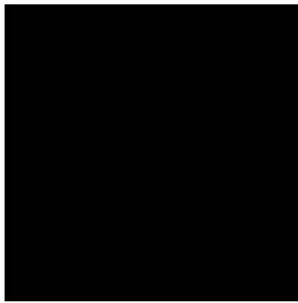


**Figure 2: Once again, determine cover by tracing the periphery of the furthest-extending branches, including all that lies within, regardless of gaps. If adjacent trees overlap, count the cover of only one of the trees (cover can not exceed 100%). To figure out the percent cover of a given layer, determine the total cover provided by all vegetation within that layer.**

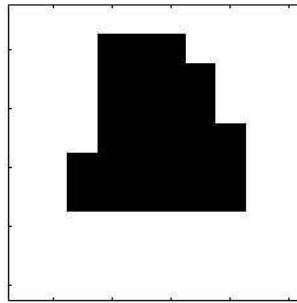


# Spatial Pattern Chart for Habitat Structure Assessment Protocol

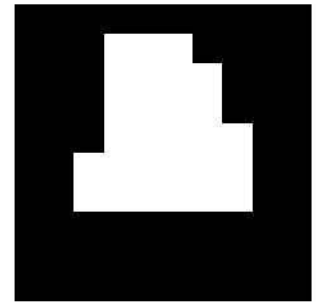
## SIMPLE



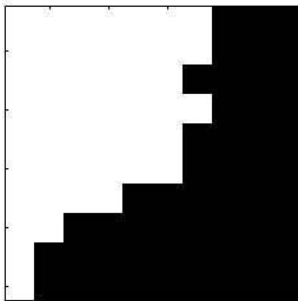
1: COMPLETE



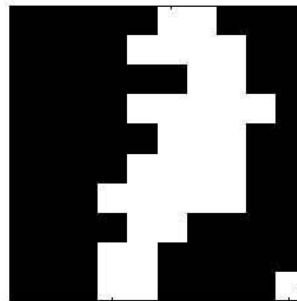
2: SURROUNDED



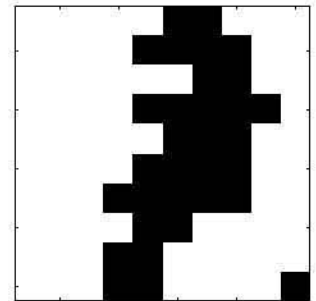
3: SURROUNDING



4: EDGE

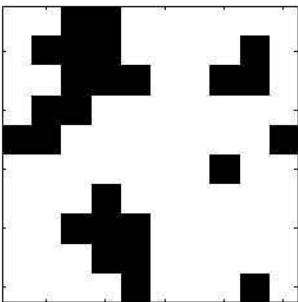


5: DIVIDED

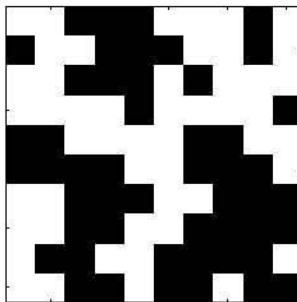


6: DIVIDING

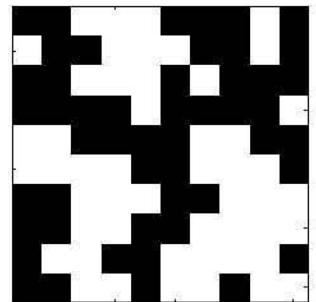
## CLUMPED



7: Low Cover (25%)

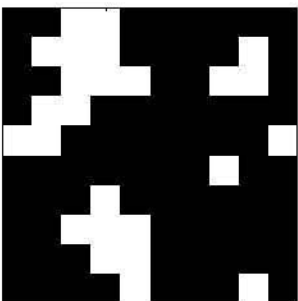


8: Medium Cover (50%)

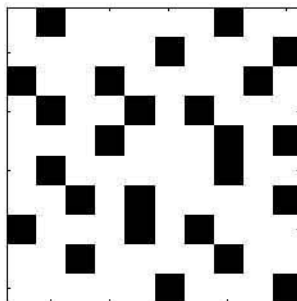


9: Medium Cover (50%)

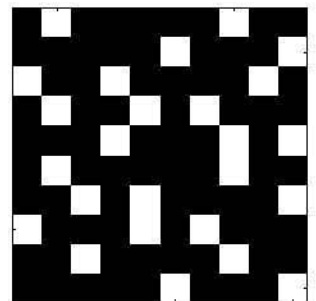
## DISPERSED



10: High Cover (75%)



11: Low Cover (25%)



12: High Cover (75%)